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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,623	09/02/2003	Jang-Kun Song	6192.0152.C1	1035

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EXAMINER	
CHOWDHURY, TARIFUR RASHID	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/652,623	SONG, JANG-KUN	
	Examiner	Art Unit	
	Tarifur R Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/697,153.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/697,153, filed on October 27, 2000. ***Specification***

2. The disclosure is objected to because of the following informalities:

The information under the heading "cross reference" should be updated.

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Hiroshi Ihara (Hiroshi), JP 10-288794.**

5. The AAPA described in pages 2-3 and shown in Figure 1 of the present application discloses a thin film transistor array substrate for a liquid crystal display comprising:

- an insulating substrate (100);

- a gate line formed on the substrate (100) (page 2, line 5);
- a common electrode line proceeding parallel to the gate line formed on the insulating substrate (100) (page 2, lines 6-8);
- storage capacitor electrodes (230 & 240) (branched electrodes for claim 5) connected to the common electrode line (page 2, lines 8-9);
- a gate insulating layer (310) formed on the gate line, the common electrode line, and the storage capacitor electrode (page 2, lines 9-11);
- a data line (400) formed on the gate insulating layer (310);
- a protective layer (320) formed on the data line (400);
- a pixel electrode (500) formed on the protective layer (320) with opening patterns (510);

The AAPA differs from the claimed invention because it does not explicitly disclose that the pixel electrode covers the entire width of the storage capacitor electrodes at particular regions.

Hiroshi discloses a liquid crystal display wherein the pixel electrode (105) covers the entire width of the storage capacitor electrode (106) (branched electrode for claim 15) at particular regions (Fig. 6). Hiroshi also discloses that such arrangements are advantageous since it would provide a TFT array substrate capable of preventing yield from lowering without increasing the cost.

Hiroshi is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to cover the entire width of the storage capacitor electrode with the pixel electrode at particular regions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the inventions was made to modify the display device of the AAPA such that the pixel electrode covers the entire width of the storage capacitor electrode/branched electrode of the common electrode line at particular regions so that a TFT substrate capable of preventing yield without increasing the cost is obtained, as per the teachings of Hiroshi.

Accordingly, claims 11 and 15 would have been obvious.

As to claim 12, Figure 1of the AAPA further shows that the storage capacitor electrode is respectively provided at left side and right side of each pixel electrode.

6. Claims 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Lee et al., (Lee), USPAT 6,512,565.

7. The AAPA described in pages 2-3 and shown in Figure 1 of the present application discloses a thin film transistor array substrate for a liquid crystal display comprising:

- an insulating substrate (100);
- a gate line formed on the substrate (100) (page 2, line 5);
- a common electrode line proceeding parallel to the gate line formed on the insulating substrate (100) (page 2, lines 6-8);
- storage capacitor electrodes (230 & 240) (branched electrodes for claim 5) connected to the common electrode line (page 2, lines 8-9);
- a gate insulating layer (310) formed on the gate line, the common electrode

line, and the storage capacitor electrode (page 2, lines 9-11);

- a data line (400) formed on the gate insulating layer (310);
- a protective layer (320) formed on the data line (400);
- a pixel electrode (500) formed on the protective layer (320) with opening patterns (510);

The AAPA differs from the claimed invention because it does not explicitly disclose that the pixel electrode covers the entire width of the branched electrodes of the common electrode line (storage capacitor electrodes for claim 11) at particular regions.

Lee discloses and shows a liquid crystal display wherein the pixel electrode (27c) covers the entire width of the branched electrode (23c) of the common electrode (23) (storage capacitor electrode for claim 11) at particular regions (Fig. 4; col. 5, lines 60-66, col. 6, lines 66-67). Lee also discloses that such arrangements are advantageous since it would provide a liquid crystal display that is capable of obtaining a complete viewing angle characteristic at all azimuth angles in the screen as well as will provide fast response speed (col. 2, lines 47-54).

Lee is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to cover the entire width of the storage capacitor electrode/branched electrode of the common electrode with the pixel electrode at particular regions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the inventions was made to modify the display device of the AAPA such that the

pixel electrode covers the entire width of the storage capacitor electrode/branched electrode of the common electrode line at particular regions so that a display that is capable of obtaining a complete viewing angle characteristic at all azimuth angles in the screen as well as will providing fast response speed is obtained, as per the teachings of Lee.

Accordingly, claims 11 and 15 would have been obvious.

As to claim 12, Figure 1of the AAPA further shows that the storage capacitor electrode is respectively provided at left side and right side of each pixel electrode.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Hiroshi as applied to claims 11 and 12 above and in view of Song, USPAT 6,252,643 B1.

9. The limitation still lacking is that the common electrode line comprising two separate lines.

Song discloses a thin film transistor array substrate for liquid crystal display wherein the common electrode line comprises two separate lines (Figs. 10-12; col. 8, lines 33-50). Song further discloses that common electrode line comprising two separate lines is advantageous since it will allow to measure a voltage drop occurring in a substantially central portion of the matrix and thus prevent flicker from being generated in the image displayed by the device and improve uniformity of contrast and brightness of the image (col. 2, lines 50-61; col. 3, lines 50-53).

Song is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation of using common electrode line that comprises two separate lines.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of the AAPA such that the common electrode line comprises at least two separate lines so that the voltage drop occurring in a substantially central portion of the matrix can be measured and thus flicker generation in the image can be prevented and uniformity of contrast and brightness of the image can be improved, as per the teachings of Song.

Accordingly, claim 13 would have been obvious.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Lee as applied to claims 11 and 12 above and in view of Song, USPAT 6,252,643 B1.

11. The limitation still lacking is that the common electrode line comprising two separate lines.

Song discloses a thin film transistor array substrate for liquid crystal display wherein the common electrode line comprises two separate lines (Figs. 10-12; col. 8, lines 33-50). Song further discloses that common electrode line comprising two separate lines is advantageous since it will allow to measure a voltage drop occurring in a substantially central portion of the matrix and thus prevent flicker from being generated in the image displayed by the device and improve uniformity of contrast and brightness of the image (col. 2, lines 50-61; col. 3, lines 50-53).

Song is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation of using common electrode line that comprises two separate lines.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of the AAPA such that the common electrode line comprises at least two separate lines so that the voltage drop occurring in a substantially central portion of the matrix can be measured and thus flicker generation in the image can be prevented and uniformity of contrast and brightness of the image can be improved, as per the teachings of Song.

Accordingly, claim 13 would have been obvious.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 11-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 3, 1 and 4 respectively of U.S. Patent No. 6,614,492. Although the conflicting claims are not identical, they are

not patentably distinct from each other because the patented claims anticipate the instant claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
April 20, 2004

TARIFUR R. CHOWDHURY
PRIMARY EXAMINER